(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 18 October 2001 (18.10.2001)

PCT

(10) International Publication Number WO 01/078409 A3

HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK,

LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,

MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European

patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,

CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(84) Designated States (regional): ARIPO patent (GH, GM,

(51) International Patent Classification7: H
G02B 27/22

H04N 13/00,

(21) International Application Number: PCT/HU01/00037

(22) International Filing Date: 3 April 2001 (03.04.2001)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: P 0001449

7 April 2000 (07.04.2000) HU

Declaration under Rule 4.17:

of inventorship (Rule 4.17(iv)) for US only

(71) Applicant and

(72) Inventor: BALOGH, Tibor [HU/HU]; Ady Endre út 3a., H-1192 Budapest (HU). Published:

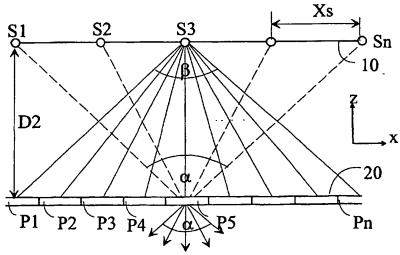
with international search report

(74) Agent: S.B.G. & K. PATENT AND LAW OFFICES; Andrássy út 113, H-1062 Budapest (HU). (88) Date of publication of the international search report: 12 September 2002

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND APPARATUS FOR THE PRESENTATION OF THREE-DIMENSIONAL IMAGES



(57) Abstract: There is disclosed a method and apparatus for the presentation of three-dimensional images, where light beams with appropriate intensity and optionally with appropriate colour are projected in different viewing directions and thereby creating a three-dimensional image. The light beams are created with a light emitting surface (10) comprising cyclically addressable light sources (S). The surface (10) is positioned behind a screen (20) comprising pixels (P) with a controllable light transmission or reflection. The light beams emitted from different light sources (S) illuminate the individual pixels (P) from different directions. According to the invention, the distance between the light sources (S) is larger than the distance between the pixels (P), and the light sources (S) are positioned so much away from the pixels so that the number of pixels (P) illuminated by one light source (S) is greater than the number of light sources illuminating one pixel (P).

O 01/078409

Internal lal Application No PCT/HU 01/00037

A. CLASSI IPC 7	FICATION OF SUBJECT MATTER H04N13/00 G02B27/22		
According to	o International Patent Classification (IPC) or to both national classificat	ion and IPC	
	SEARCHED		
Minimum de IPC 7	ocumentation searched (classification system followed by classification	n symbols)	
	ation searched other than minimum documentation to the extent that su		
	data base consulted during the international search (name of data base nternal, PAJ, WPI Data	e and, where practical, search terms used)	·
C. DOCUM	MENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the rele	evant passages	Relevant to dalm No.
Х	EICHENLAUB J ET AL: "A PROTOTYPE PANEL HOLOGRAM-LIKE DISPLAY THAT MULTIPLE PERSPECTIVE VIEWS AT FUL RESOLUTION" PROCEEDINGS OF THE SPIE, vol. 2409, 7 February 1995 (1995-pages 102-112, XP001010742 ISSN: 0959-4388 cited in the application	PRUDUCES L	1,14
A	figures 1,2		2-13, 15-29
A	PATENT ABSTRACTS OF JAPAN vol. 018, no. 566 (E-1622), 28 October 1994 (1994-10-28) -& JP 06 205446 A (NIPPON HOSO K) 22 July 1994 (1994-07-22) abstract; figures 1-5	YOKAI),	1-29
X Fu	urther documents are listed in the continuation of box C.	Palent family members are lister	d in annex.
A docu con. *E* earlie filing *L* docu whis cital *O* docu othe	ment defining the general state of the art which is not sidered to be of particular relevance or document but published on or after the international g date ment which may throw doubts on priority claim(s) or ch is cited to establish the publication date of another tion or other special reason (as specified) ment referring to an oral disclosure, use, exhibition or er means unent published prior to the international filing date but in than the priority date claimed	 "T" later document published after the into or priority date and not in conflict wit cited to understand the principle or tinvention "X" document of particular relevance; the cannot be considered novel or canninotive an inventive step when the cannot be considered to involve an idecument is combined with one or ments, such combination being obvi in the art. "&" document member of the same pater 	in the application but heavy underlying the claimed invention of be considered to locument is taken alone claimed invention inventive step when the none other such docu-ous to a person skilled internity
	ne actual completion of the international search 2 October 2001	Date of mailing of the international s	earch report
Name an	nd mailing address of the ISA	Authorized officer	
	European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Ward, S	

Internal Application No PCT/HU 01/00037

0.40==01=	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	PCT/HU 01/0003/		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 12, 29 October 1999 (1999-10-29) -& JP 11 174376 A (RICOH CO LTD), 2 July 1999 (1999-07-02) abstract; figures	1-29		
A .	EICHENLAUB J: "27.2: A LIGHTWEIGHT COMPACT 2-D/3-D AUTOSTEREOSCOPIC LCD BACKLIGHT FOR GAMES, MONITOR, AND NOTEBOOK APPLICATIONS" 1997 SID INTERNATIONAL SYMPOSIUM DIGEST OF TECHNICAL PAPERS. BOSTON, MAY 13 - 15, 1997, SID INTERNATIONAL SYMPOSIUM DIGEST OF TECHNICAL PAPERS, SANTA ANA, SID, US, vol. 28, 13 May 1997 (1997-05-13), pages 451-454, XP000722739 ISSN: 0097-966X the whole document	1-29		
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 08, 30 June 1999 (1999-06-30) -& JP 11 072744 A (M R SYST KENKYUSHO:KK), 16 March 1999 (1999-03-16) abstract; figures	1-29		
A	US 6 040 807 A (MASHITANI KEN ET AL) 21 March 2000 (2000-03-21) figures 5,6	1-29		
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 08, 30 June 1999 (1999-06-30) -& JP 11 085085 A (FUJITSU LTD), 30 March 1999 (1999-03-30) abstract; figures	1–29		
Α	EICHENLAUB J B ET AL: "An in cockpit situation awareness autostereoscopic avionics display" PROCEEDINGS OF THE SPIE, SPIE, BELLINGHAM, VA, US, no. 2219, 7 April 1998 (1998-04-07), pages 395-406, XP002079529 the whole document	1-29		
A	US 5 132 839 A (TRAVIS ADRIAN R L) 21 July 1992 (1992-07-21) figures	1-29		
	-/			

Interna hal Application No
PCT/HU 01/00037

		PC1/HU U1,	PCT/HU 01/00037		
	ation) DOCUMENTS CONSIDERED TO BE RELEVANT				
Category °	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.		
A	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 02, 29 February 2000 (2000-02-29) -& JP 11 308642 A (SANYO ELECTRIC CO LTD), 5 November 1999 (1999-11-05) abstract; figures		1-29		
-					
	·				
		* .			
	<u> </u>				

Information on patent family members

Internation Application No
PCT/HU 01/00037

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
JP 06205446	Α	22-07-1994	NONE		
JP 11174376	Α	02-07-1999	NONE		
JP 11072744	Α	16-03-1999	EP	0899969 A2	03-03-1999
US 6040807	A	21-03-2000	JP JP JP JP JP	2896073 B2 7294849 A 2902958 B2 7181429 A 8110495 A	31-05-1999 10-11-1995 07-06-1999 21-07-1995 30-04-1996
JP 11085085	A	30-03-1999	NONE		
US 5132839	A	21-07-1992	GB WO HK SG	2206763 A ,B 9007848 A1 61295 A 99694 G	11-01-1989 12-07-1990 05-05-1995 28-10-1994
JP 11308642	Α	05-11-1999	NONE		